



Our Ref. No.: 004164.P004

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of:

Stephen J. Ruiz

Serial No. 09/716,113

Filed: November 16, 2000

For: **AERODYNAMIC STANDOFFS TO
AIR COOL DISC TYPE AUTO BRAKE
ROTORS**

Examiner: Xuan Lan T. Nguyen

Art Unit: 3683

APPEAL BRIEF

Mail Stop Appeal Brief-Patents
Commissioner for Patents
Post Office Box 1450
Alexandria, Virginia 22313-1450

Dear Sir:

Applicant submits, the following Appeal Brief pursuant to 37 C.F.R. § 1.192 (and in accordance with Federal Register/Vol. 69, No. 155/Thursday, August 12, 2004/Rules and Regulations) for consideration by the Board of Patent Appeals and Interferences. Applicants authorize the Commissioner to charge a payment in the amount of \$250.00 to cover the cost of filing the opening brief as required by 37 C.F.R. § 1.17(c) to Deposit Account No. 02-2666.

If necessary, the Commissioner is hereby authorized in this, concurrent and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2666 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17, particularly extension of time fees.

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I. REAL PARTY IN INTEREST

Stephen J. Ruiz, the party named in the caption, assigned his rights to that disclosed in the subject application through an assignment recorded on November 16, 2000 (011309/0566) to Stop Technologies, Inc. of Torrance, California. Thus, as owner at the time the brief is being filed, Stop Technologies, Inc. of Torrance, California, is the real party in interest.

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences that will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 1, 3-21 and 23-40 are pending with claims 4, 7-20, 24, and 27-40 withdrawn from consideration in the present application. Claims 1-3, 5-6, 21-23 and 25-26 are rejected. Claims 1-3, 5-6, 21-23 and 25-26 are being appealed.

IV. STATUS OF AMENDMENTS

Applicant has not amended the claims subsequent to a final rejection.

V. SUMMARY OF THE INVENTION

Applicant submits below a concise explanation of the subject matter defined in independent claims 1 and 21.

Claim 1 relates to a mounting hat (See Figures 3-6; page 5, line 14-page 7, line 5). The mounting hat has a lower section (320) coupled to an upper section (310). A plurality of aerodynamically shaped standoff vanes (302) each having a leading edge, a trailing edge, a top, and a bottom coupled to the upper section (310), the aerodynamically shaped standoff vanes (302) space apart the upper section (310) from a brake rotor, wherein the leading edge and the trailing edge are curved; and a plurality of vents (304) formed between adjacent aerodynamically shaped standoff vanes (302), wherein the vents (304) are circumferentially distributed on the upper section (310), and

air located within said mounting hat and air deflected from said brake rotor are induced to substantially flow through the plurality of vents in a direction outward from a radial interior of said mounting hat to a radial exterior of said mounting hat. Applicant's standoffs, add the improvement of directed air flow through vents (304), which adds additional cooling to mounting hat 300 and also to a coupled brake rotor (page 6, lines 1-5).

Claim 21 relates to a brake rotor system (Fig. 14, page 12, line 1 to page 13, line 8). The brake rotor system includes a rotor (1410) and a hub (1300) connected to the rotor. The hub has aerodynamically shaped standoff vanes (1340). Each of the standoff vanes have a leading edge, a trailing edge, a top, a bottom and vents formed between adjacent aerodynamically shaped standoff vanes. The vents are circumferentially distributed between the hub and the rotor. Air located within the hub and air deflected from the rotor are induced to substantially flow through the vents in a direction outward from a radial interior of the hub to a radial exterior of the hub (page 12, lines 2-3). The aerodynamically shaped standoff vanes space apart the hub from the rotor. The leading edge and the trailing edge of the aerodynamically shaped standoff vanes are curved (Page 12, lines 10-12).

VI. ISSUES

The Patent Office rejects claims 1, 3, 5-6, 21, 23 and 25-26 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 3,403,760 issued to Caskey ("Caskey"). Applicant presents this ground of rejection for review.

VII. ARGUMENT

A. It is asserted in the Office Action that Claims 1, 3, 5-6, 21, 23 and 25-26 are rejected as being anticipated by Caskey. This rejection is respectfully traversed. The following discussion sets forth in detail Applicant's analysis with respect to the patentability of claims 1, 3, and 5-6.

According to MPEP §2131, "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.' (Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987)). 'The identical invention must be shown in as complete detail as is contained in the ... claim.' (Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989)). The elements must be arranged as required by the claim, but this is not an ipsissimis verbis test, i.e., identity of terminology is not required. (In re Bond, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990))."

Applicant's claim 1 contains the limitations of "[a] mounting hat for a brake rotor comprising: a lower section coupled to an upper section, a plurality of aerodynamically shaped standoff vanes each having a leading edge, a trailing edge, a top, and a bottom coupled to the upper section, the aerodynamically shaped standoff vanes space apart the upper section from a brake rotor, wherein the leading edge and the trailing edge are curved and have different shapes; and a plurality of vents formed between adjacent aerodynamically shaped standoff vanes, wherein the vents are circumferentially distributed on the upper section, and air located within said mounting hat and air deflected from said brake rotor are induced to substantially flow through the plurality of vents in a direction outward from a radial interior of said mounting hat to a radial exterior of said mounting hat."

Applicant's claim 21 contains the limitations of "[a] brake rotor comprising: a rotor, a hub having a plurality of aerodynamically shaped standoff vanes each having a leading edge, a trailing edge, a top, a bottom and a plurality of vents formed between adjacent aerodynamically shaped standoff vanes coupled to the rotor, the leading edge and the trailing edge each having different shapes, wherein the vents are circumferentially distributed between the hub and the rotor, air flow is induced to flow through the plurality of vents, and the aerodynamically shaped standoff vanes space apart the hub from the rotor."

It should be noted that traditional standoffs, such as those illustrated in Applicant's Figures 1 and 2, allow for spacing apart a mounting hat/hub from a rotor in order to separate or "standoff" the rotor from the mounting hat. One skilled in the art should know that standoffs are used for high performance applications because if the rotor and mounting hat/hub were bolted together, the difference in heat dissipation during braking causes the two parts to expand either at different rates or at the same rate, which causes warping. If the two portions are not separated in high-performance applications, brake efficiency is reduced and instability occurs due to wobble caused by warping. The prior art standoffs were solely used to reduce wobble caused by warping. The prior art standoffs are squared and do not direct air flow in any certain direction. Therefore, the air flow from a prior art standoff typically interferes with or does not add to additional cooling of a rotor or mounting hat/hub.

It is asserted in the Office Action mailed on January 25, 2005 that leading edge and the trailing edge of the recess in Caskey are curved. In the Office Action, however, it is first asserted that tabs 60 disclosed in Caskey are equivalent to standoff vanes. It is next asserted in the Office Action that recess 65 has a trailing edge and leading edge that are curved and have different shapes. Applicant's claims, however, assert the aerodynamic standoff vanes have a leading edge and a trailing edge where each are curved and have different shapes. Applicant notes that a recess and a tab are two different items. If comparison is made between tabs 60 and aerodynamic standoff vanes, in order for anticipation, tabs 60 must have a leading edge and trailing edge that are each curved and have different shapes. As disclosed in Figure 3 of Caskey, tabs 60 has same shaped leading and trailing edges. Moreover, the semi-circular openings 62

formed from adjacent tabs 60 are more evidence that the leading edge and trailing edge of tabs 60 have the same exact shape. Applicant further notes that recess 65 is formed from flange 38.

Additionally, Fig. 3 on page 3 of the Office Action indicates a leading edge and a trailing edge, but the areas indicated are only part of semi-circular opening 62. Applicant respectfully notes that this is incorrect. Applicant includes a marked up version of Fig.3 from the Office Action indicating the correct leading and trailing edges. Further, Applicant submits a marked up version of Applicant's Fig. 3 indicating the leading and trailing edges of aerodynamic standoff vanes 302. The differences are more readily seen by comparison of the two submitted figures.

Applicant notes that the submitted figures are only for reference and are submitted to aid in assisting understanding of the differences between Caskey and Applicant's claimed invention. The submitted figures are not to be regarded as a drawing submission/amendment.

Therefore, since Caskey does not disclose, teach or suggest all of Applicant's amended claims 1 and 21 limitations, Applicant respectfully asserts that a *prima facie* rejection under 35 U.S.C. § 102(b) has not been adequately set forth relative to Caskey. Thus, Applicant's amended claims 1 and 21 are not anticipated by Caskey. Additionally, the claims that directly or indirectly depend on claims 1 and 21, namely claims 3 and 5-6, and 23 and 25-26, respectively, are also not anticipated by Caskey for the same reason.

Accordingly, withdrawal of the 35 U.S.C. § 102(b) rejections for claims 1, 3, 5-6, 21, 23 and 25-26 are respectfully requested.

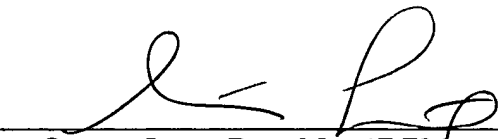
VIII. CONCLUSION AND RELIEF

Based on the foregoing, Applicant requests that the Board overturn the rejection of all pending claims and hold that all of the claims of the present application are allowable.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR, & ZAFMAN LLP

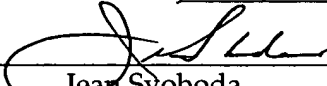
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CERTIFICATE OF MAILING:

I hereby certify that this correspondence is being deposited as First Class Mail, with sufficient postage, with the United States Postal Service in an envelope addressed to: Mail Stop Appeal Brief-Patents, Commissioner for Patents, Post Office Box 1450, Alexandria, Virginia 22313-1450 on June 1, 2005.


Jean Svoboda

IX. APPENDIX

The claims involved in this Appeal are as follows:

Claim 1 (Previously Presented): A mounting hat for a brake rotor comprising:
a lower section coupled to an upper section,

a plurality of aerodynamically shaped standoff vanes each having a leading edge, a trailing edge, a top, and a bottom coupled to the upper section, the aerodynamically shaped standoff vanes space apart the upper section from a brake rotor, wherein the leading edge and the trailing edge are curved and have different shapes; and

a plurality of vents formed between adjacent aerodynamically shaped standoff vanes, wherein the vents are circumferentially distributed on the upper section, and air located within said mounting hat and air deflected from said brake rotor are induced to substantially flow through the plurality of vents in a direction outward from a radial interior of said mounting hat to a radial exterior of said mounting hat.

Claim 2 (Canceled)

Claim 3 (Original): The mounting hat of claim 1, wherein the leading edge and the trailing edge of the plurality of aerodynamically shaped standoff vanes are one of stepped up and ramped up from the upper section towards the top of the plurality of aerodynamically shaped standoff vanes.

Claim 4 (Withdrawn): The mounting hat of claim 1, wherein the leading edge and the trailing edge of the plurality of aerodynamically shaped standoff vanes are symmetrical.

Claim 5 (Previously Presented): The mounting hat of claim 1, wherein the leading edge and the trailing edge of the plurality of aerodynamically shaped standoff vanes are asymmetrical from a center point along each of the leading edge and the trailing edge.

Claim 6 (Original): The mounting hat of claim 1, wherein the top of the plurality of aerodynamically shaped standoff vanes is bored to accept one of a drive pin, a bolt, and a lug.

Claim 7 (Withdrawn): The mounting hat of claim 1, wherein the upper section includes distributed openings.

Claim 8 (Withdrawn): The mounting hat of claim 7, wherein the plurality of aerodynamically shaped standoff vanes include an extension for coupling to the distributed openings.

Claim 9 (Withdrawn): A mounting hat for a brake rotor comprising:
a lower section coupled to an upper section, a plurality of first aerodynamically shaped standoff vanes each having a leading edge, a trailing edge, a top and a bottom coupled to the upper section;
a plurality of second aerodynamically shaped standoff vanes each having a leading edge, a trailing edge and a top coupled to the upper section; and
a plurality of vents formed between adjacent first aerodynamically shaped standoff vanes and second aerodynamically shaped standoff vanes,
wherein the vents are circumferentially distributed on the upper section, and air flow is induced to flow through the plurality of vents.

Claim 10 (Withdrawn): The mounting hat of claim 9, wherein the leading edge and the trailing edge of the plurality of first aerodynamically shaped standoff vanes are curved.

Claim 11 (Withdrawn): The mounting hat of claim 9, wherein the leading edge and the trailing edge of the plurality of second aerodynamically shaped standoff vanes are curved.

Claim 12 (Withdrawn): The mounting hat of claim 9, wherein the leading edge and the trailing edge of the plurality of first aerodynamically shaped standoff vanes are one of stepped up and ramped up from the upper section towards the top of the plurality of first aerodynamically shaped standoff vanes.

Claim 13 (Withdrawn): The mounting hat of claim 9, wherein the leading edge and the trailing edge of the plurality of second aerodynamically shaped standoff vanes are one of stepped up and ramped up from the upper section towards the top of

the plurality of second aerodynamically shaped standoff vanes.

Claim 14 (Withdrawn): The mounting hat of claim 9, wherein the leading edge and the trailing edge of the plurality of first aerodynamically shaped standoff vanes are symmetrical.

Claim 15 (Withdrawn): The mounting hat of claim 9, wherein the leading edge and the trailing edge of the plurality of second aerodynamically shaped standoff vanes are symmetrical.

Claim 16 (Withdrawn): The mounting hat of claim 9, wherein the leading edge and the trailing edge of the plurality of first aerodynamically shaped standoff vanes are asymmetrical.

Claim 17 (Withdrawn): The mounting hat of claim 9, wherein the leading edge and the trailing edge of the plurality of second aerodynamically shaped standoff vanes are asymmetrical.

Claim 18 (Withdrawn): The mounting hat of claim 9, wherein the top of the plurality of first aerodynamically shaped standoff vanes is bored to accept one of a drive pin, a bolt, and a lug.

Claim 19 (Withdrawn): The mounting hat of claim 9, wherein the upper section includes distributed openings.

Claim 20 (Withdrawn): The mounting hat of claim 19, wherein the plurality of aerodynamically shaped standoff vanes include an extension for coupling to the distributed openings.

Claim 21 (Previously Presented) A brake rotor comprising:

a rotor,

a hub having a plurality of aerodynamically shaped standoff vanes each having a leading edge, a trailing edge, a top, a bottom and a plurality of vents formed between adjacent aerodynamically shaped standoff vanes coupled to the rotor, the leading edge and the trailing edge each having different shapes, wherein the vents are

circumferentially distributed between the hub and the rotor, air flow is induced to flow through the plurality of vents, and the aerodynamically shaped standoff vanes space apart the hub from the rotor.

Claim 22 (Canceled)

Claim 23 (Original): The brake rotor of claim 21, wherein the leading edge and the trailing edge of the plurality of aerodynamically shaped standoff vanes are one of stepped up and ramped up towards the top of the plurality of aerodynamically shaped standoff vanes.

Claim 24 (Withdrawn): The brake rotor of claim 21, wherein the leading edge and the trailing edge of the plurality of aerodynamically shaped standoff vanes are symmetrical.

Claim 25 (Previously Presented): The brake rotor of claim 21, wherein the leading edge and the trailing edge of the plurality of aerodynamically shaped standoff vanes are asymmetrical.

Claim 26 (Original): The brake rotor of claim 21, wherein the top of the plurality of aerodynamically shaped standoff vanes is bored to accept one of a drive pin, a bolt, and a lug.

Claim 27 (Withdrawn): The mounting hat of claim 21, wherein the upper section includes distributed openings.

Claim 28 (Withdrawn): The mounting hat of claim 27, wherein the plurality of aerodynamically shaped standoff vanes include an extension for coupling to the distributed openings.

Claim 29 (Withdrawn): A brake rotor comprising:
a rotor;
a hub having a plurality of first aerodynamically shaped standoff vanes each having a leading edge, a trailing edge, a top and a bottom coupled to the hub;
a plurality of second aerodynamically shaped standoff vanes each having a

leading edge, a trailing edge and a top coupled to the hub; and
a plurality of vents formed between adjacent first aerodynamically shaped
standoff vanes and second aerodynamically shaped standoff vanes,
wherein the vents are circumferentially distributed between the hub and the
rotor, and air flow is induced to flow through the plurality of vents.

Claim 30 (Withdrawn): The brake rotor of claim 29, wherein the leading edge
and the trailing edge of the plurality of first aerodynamically shaped standoff vanes are
curved.

Claim 31 (Withdrawn): The brake rotor of claim 29, wherein the leading edge and
the trailing edge of the plurality of second aerodynamically shaped standoff vanes are
curved.

Claim 32 (Withdrawn): The brake rotor of claim 29, wherein the leading edge and
the trailing edge of the plurality of first aerodynamically shaped standoff vanes are one
of stepped up and ramped up towards the top of the plurality of first aerodynamically
shaped standoff vanes.

Claim 33 (Withdrawn): The brake rotor of claim 29, wherein the leading edge and
the trailing edge of the plurality of second aerodynamically shaped standoff vanes are
one of stepped up and ramped up towards the top of the plurality of second
aerodynamically shaped standoff vanes.

Claim 34 (Withdrawn): The brake rotor of claim 29, wherein the leading edge and
the trailing edge of the plurality of first aerodynamically shaped standoff vanes are
symmetrical.

Claim 35 (Withdrawn): The brake rotor of claim 29, wherein the leading edge and
the trailing edge of the plurality of second aerodynamically shaped standoff vanes are
symmetrical.

Claim 36 (Withdrawn): The brake rotor of claim 29, wherein the leading edge and
the trailing edge of the plurality of first aerodynamically shaped standoff vanes are
asymmetrical.

Claim 37 (Withdrawn):The brake rotor of claim 29, wherein the leading edge and the trailing edge of the plurality of second aerodynamically shaped standoff vanes are asymmetrical.

Claim 38 (Withdrawn):The brake rotor of claim 29, wherein the top of the plurality of first aerodynamically shaped standoff vanes is bored to accept one of a drive pin, a bolt, and a lug.

Claim 39 (Withdrawn):The mounting hat of claim 29, wherein the upper section includes distributed openings.

Claim 40 (Withdrawn):The mounting hat of claim 39, wherein the plurality of aerodynamically shaped standoff vanes include an extension for coupling to the distributed openings.

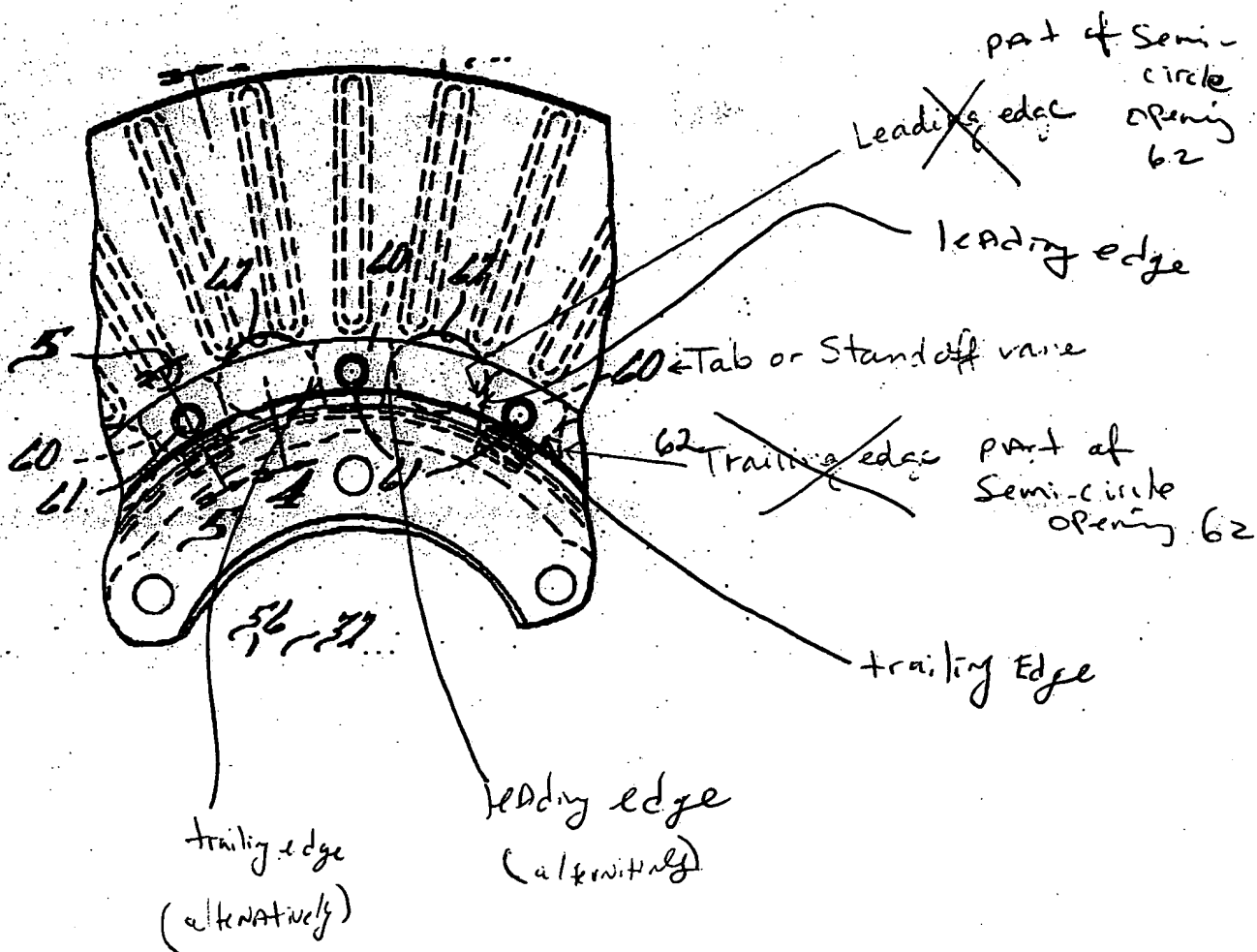




FIG. 2
PRIOR ART

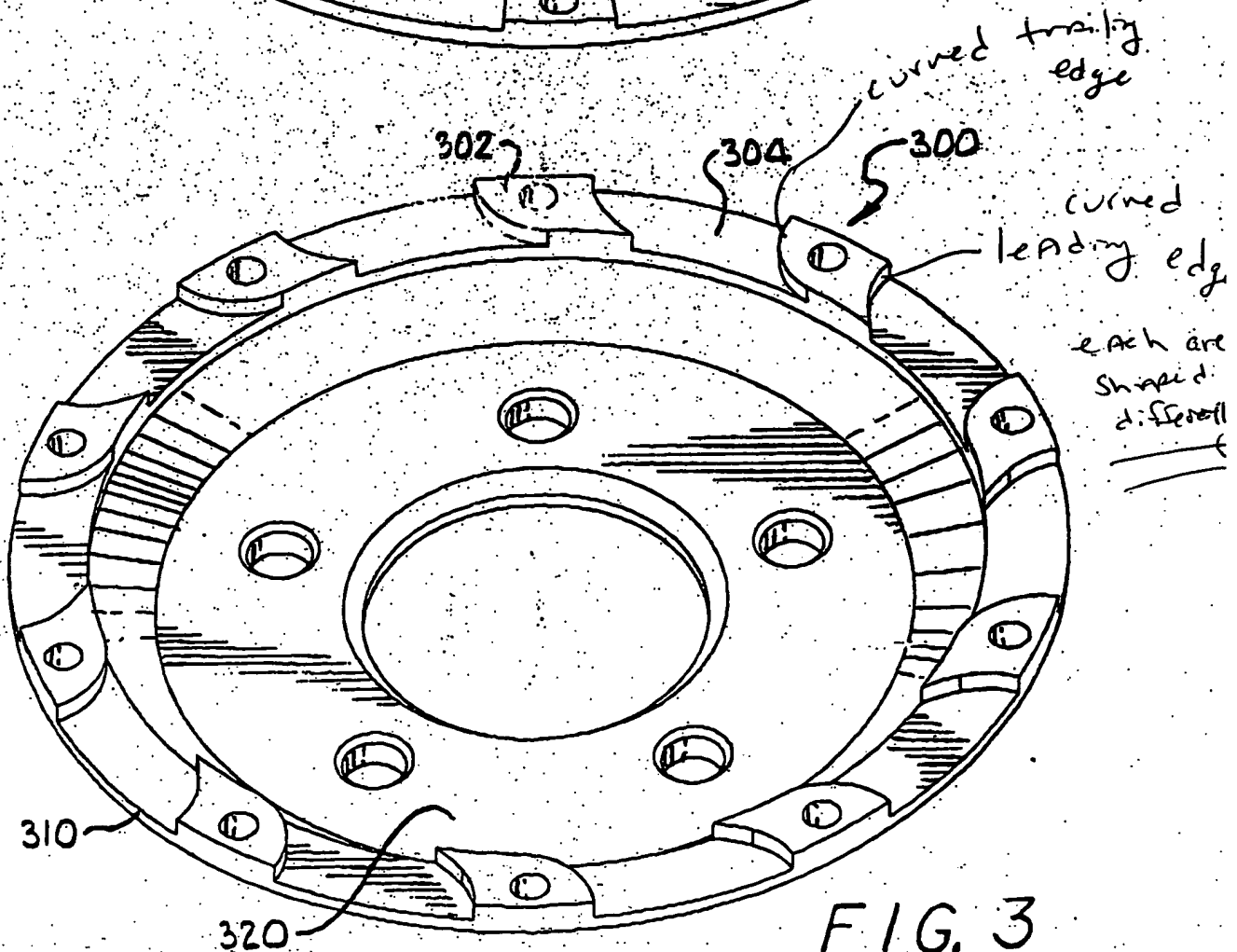
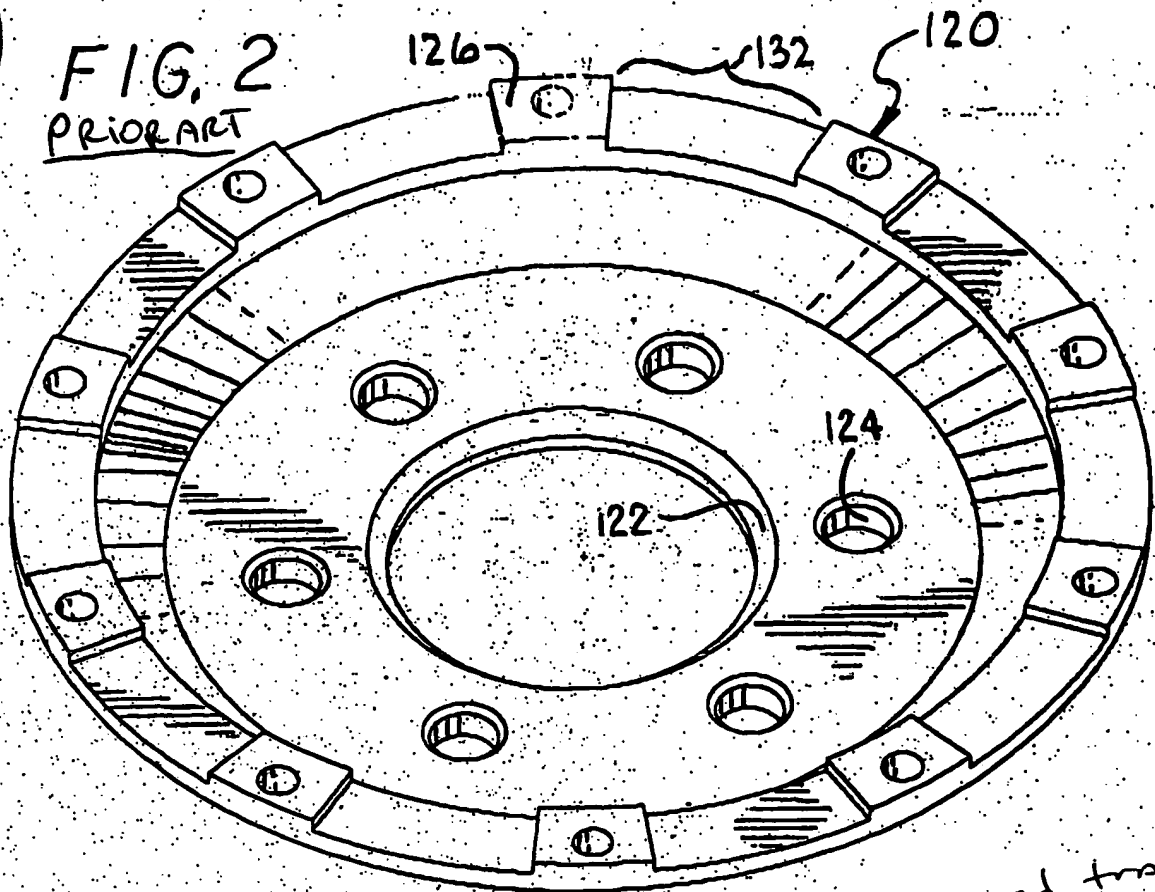


FIG. 3

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